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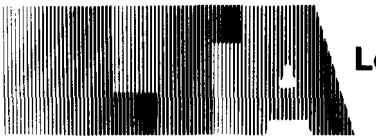

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April 23, 1992

Ms. Donna Searcy
Secretary
Federal Communications Commission
Room 222
1919 M Street N.W.
Washington, D.C. 20554

Re: Requests for Pioneer's Preferences with regard to Proposals to Establish Low-Earth Orbit Satellite Systems in the 1610-1626.5 MHz and 2483.5-2500 MHz Bands, ET Docket No. 92-28, PP-32, PP-29, PP-33, PP-30, PP-31

Dear Ms. Searcy:

Attached are an original and the required copies of the "Reply Comments of Loral Qualcomm Satellite Services, Inc. in the above-captioned matter.

Please contact the undersigned should you have any questions.

Sincerely yours,

Leslie A. Taylor

Leslie A. Taylor

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Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

In the Matter of:	)	ET Docket No. 92-28
	)	
LORAL QUALCOMM SATELLITE SERVICES, INC.	)	PP-31
	)	
CONSTELLATION COMMUNICATIONS, INC.	)	PP-29
	)	
TRW, INC.	)	PP-33
	)	
ELLIPSAT CORPORATION	)	PP-30
	)	
MOTOROLA SATELLITE COMMUNICATIONS, INC.	)	PP-32
	)	
Requests for Pioneer's Preferences with regard to Proposals to Establish Low-Earth Orbit Satellite Systems in the 1610-1626.5 MHz and 2483.5-2500 MHz Bands	)	

REPLY COMMENTS OF LORAL QUALCOMM SATELLITE SERVICES, INC.

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Satellite Services, Inc.

April 23, 1992

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SUMMARY

The Commission should not grant a pioneer's preference to Motorola Satellite Communications, Inc. because such action would unlawfully prejudice the rights of Loral Qualcomm Satellite Services, Inc., as well as the other applicants for low-earth orbit satellite service in the RDSS bands, and disserve the public interest. A grant of a pioneer's preference to Motorola, because its system would require the monopoly use of the 1616-1626.5 MHz band, would in effect be a comparative hearing without rules of the pending applications to provide mobile voice, data and radiodetermination service from low-earth orbit satellite systems. Moreover, granting a preference would unlawfully and inappropriately shape the RDSS rulemaking towards Motorola's monopolistic system design, excluding other systems.

The public and the RDSS applicants deserve the opportunity for full and fair consideration of the pending applications. To pre-empt this consideration through the award of a pioneer's preference to Motorola would deny these rights and could subsequently deny the United States public as well as the world the opportunity to receive high-quality, cost-effective new communications service on a competitive basis.

Motorola does not qualify for a pioneer's preference in this proceeding. Its system uses various innovations developed and utilized in other communications systems, including government and military systems. Moreover, Motorola has not demonstrated the feasibility of its system, as required by the pioneer preference rules.

In order to promote the public interest in the expeditious introduction of new telecommunications services, the Commission should defer action in this pioneer preference proceeding and promptly initiate a rulemaking to amend the RDSS rules. At a minimum, the Commission should defer action on the pioneer's preference request until the Commission acts on the pending requests for reconsideration of its Pioneer Preference rules. These petitions raise important questions as to the scope, applicability and nature of the preference.

The Commission can, and should award a pioneer's preference to LQSS for its pioneering work in the area of CDMA. LQSS shareholder Qualcomm, Inc. has developed key innovations in CDMA which are being applied to mobile communications, including cellular and PCS, provided terrestrially, as well as mobile communications provided by geostationary satellite. LQSS is further developing CDMA to use in the GLOBALSTAR system to provide low-cost, high-quality mobile voice, data and RDSS service from low-earth orbit satellites. A pioneer preference can be granted to LQSS without prejudicing the pending RDSS rulemaking, or the processing of the applications, because the GLOBALSTAR system can share the entire RDSS band with other systems.

Before the
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MOTOROLA SATELLITE COMMUNICATIONS, INC.	)	PP-32
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REPLY COMMENTS OF LORAL QUALCOMM SATELLITE SERVICES, INC.

Loral Qualcomm Satellite Services, Inc. (LQSS), by its attorneys, respectfully submits its reply comments with regard to the above-captioned requests for pioneer's preference.[1] LQSS is an applicant for authority to construct a 48-satellite low-earth orbit satellite system which will provide voice, data and radiodetermination service. LQSS has filed a petition for rulemaking to amend the Commission's current rules for the use of the 1610-1626.5

[1] The time for submission of reply comments was established in Public Notice Report No. 22153, "Requests for Pioneer's Preference Filed," ET Docket No. 92-28, released March 9, 1992.

MHz and 2483.5-2500 MHz bands (RDSS bands) and a request for pioneer's preference, and comments in support of its pioneer's preference request (filed April 8, 1992).

I. INTRODUCTION AND REQUEST THAT THE COMMISSION DEFER FURTHER ACTION IN THIS PROCEEDING

Although LQSS believes that, pursuant to the Commission's pioneer preference rules, it should receive a pioneer's preference, LQSS urges the Commission to defer any further action in this proceeding. The Commission must reconsider the manner and order in which it is addressing the important questions concerning the RDSS bands and the applications filed for provision of voice, data and position-location service in these bands from low-earth orbit satellite systems.

Applications for provision of this important new telecommunications service have been pending since the end of 1990. The recently-concluded 1992 World Administrative Radio Conference (WARC-92) indicated its approval of these services by allocating the entire 1610-1626.5 MHz and 2483.5-2500 MHz bands for Mobile Satellite Service, and establishing the ground rules for key technical criteria and regulatory procedures for low-earth orbit satellite systems.[2] These allocations were made on the representation of the United States that multiple low-earth orbit systems could be accommodated in these bands -- or, put another way, that the allocations were for a service, not a single system, as had been the fear of many administrations participating in the conference. [3]

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[2] The Final Acts of the World Administrative Radio Conference, (WARC-92) at Malaga-Torremolinos, including the Addendum and Corrigendum. See also Resolution Com5/8, Interim Procedures for the Coordination and Notification of Frequency Assignments of Non-Geostationary Satellite Networks in Certain Space Services and Other Services to Which the Bands are Allocated, at 101 of the Final Acts.

[3] Press Release, issued by the International Telecommunication Union, ITU/92-2, 3 March 1992. See also WARC Final Press Release, U.S. Delegation, March 3, 1992; "WARC Ends: LEOS, FPLMTS and BSS-Sound Top List of Winners," The Spectrum Report, Vol. 2, No. 6, March 18, 1992, Phillips Publishing Inc.; "U.S. Big, Little LEOs' Get Allocations at WARC Largely as Proposed, but Limits Aimed at Protecting Russian Glonass Systems Could

Now that WARC-92 is concluded, the parameters within which the Commission can operate in acting on the pending rulemaking requests for allocation of the RDSS bands for mobile-satellite service, and for necessary technical modifications to the Commission's rules are set. The applicants have filed requests for a rulemaking which is narrow in scope, focusing on the respective allocation questions, and consequential technical revisions. Such a rulemaking can be concluded in a relatively short period of time. Following the rulemaking, the pending applications can be quickly processed (with amendments permitted if necessary as a result of the rulemaking).[4]

This sequence of Commission action is both necessary and preferable to completion of the preference proceeding at this time. The Commission now has before it mutually exclusive applications, all accepted for filing before the effective date of the Commission's Pioneer Preference rules.[5] These mutually exclusive applications are entitled to comparative consideration, in accordance with the Communications Act of 1934, as amended (the Act), the Commission's rules and procedures, and legal precedent, such as Ashbacker v. United States, 326 U.S. 327 (1945).

In this pioneer's preference proceeding, however, the Commission could violate the Act and its rules and policies by (a) applying the pioneer's preference in a situation where mutually exclusive applications are pending, (b) considering a "dispositive" preference in

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Restrict Iridium; CEPT Nations get 230 Mhz for Future Public Land Mobile Service; BSS-Sound Gains Worldwide Allocation at L-Band," Telecommunications Reports, March 9, 1992, Vol. 58, No. 10, BRP Publications Inc. at 12.

[4]Public Notice, Report No. DS-1068, released April 1, 1991, as corrected by Report No. DS-1071, released April 18, 1991, provides that amendments to applications will be permitted if necessary as a result of any rules the Commission adopts.

[5] Report and Order in the Matter of Establishing Procedures to Provide a Preference to Applicants Proposing an Allocation for New Services (Pioneer's Preference), GEN Docket No. 90-217, 6 FCC Rcd 3488 (1991), rules effective July 30, 1991.

a situation where it would violate Ashbacker rights,[6] and (c) considering a pioneer's preference which would be inconsistent with its open entry and pro-competition[7] policies (as well as Ashbacker). The Commission should not allow Motorola Satellite Communications, Inc. (Motorola) to utilize the pioneer's preference to gain what has eluded it in the other related RDSS proceedings -- an authorization to provide service on a monopoly basis.[8] As explained in numerous prior pleadings[9], Motorola's proposed system can not share the RDSS band with any other system, as Motorola itself admits.[10] This fact is not changed by Motorola's claim that its "band segmentation" approach permits other systems to operate.[11] Thus, what Motorola proposes is a monopoly for itself, and

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[6] Ashbacker v. FCC, 326 U.S. 327 (1945).

[7] Two weeks ago, for example, the Commission said: "It is the policy of this Commission to facilitate competition in domestic and international communications markets to the maximum extent possible." Permissible Services of U.S. Licensed International Communications Satellite Systems Separate from INTELSAT, FCC 92-95, released April 8, 1992.

[8] LQSS will comment separately on Motorola's untimely and improper attempt to "Supplement" its pioneer's preference request and for confidentiality for material submitted in connection with that "Supplement."

[9] See, Petition of TRW Inc. on Motorola's Application, June 3, 1991 at 4; Petition to Deny or Dismiss Motorola's Application of Ellipsat, June 3, 1991 at 3-4; Reply Comments of TRW Inc., July 3, 1991 at 11-12; Reply of Ellipsat, August 5, 1991 at 6-12; Reply Comments of TRW Inc. in RM 7773, November 14, 1991 at 9; Consolidated Opposition to Petitions to Deny of Loral Qualcomm Satellite Services, January 31, 1992 at 4-5, 32, 41; Consolidated Opposition to Petitions to Deny and/or Dismiss and Reply Comments of TRW Inc., January 31, 1992 at 21-28; Opposition and Reply Comments of Constellation Communications, January 31, 1992 at 12-14; Opposition of Ellipsat Corp. to Petitions and Reply to Comments, January 31, 1992 at 6-10; Consolidated Reply Comments by Loral Qualcomm Satellite Services Inc., March 27, 1992 at 9-16, Technical Appendix Sections 3 and 4; Reply Comments of Constellation Communications, March 27, 1992 at 4-9; Consolidated Response by TRW Inc., March 27, 1992 at 12-20.

[10] Consolidated Petition to Dismiss and/or Deny and Comments of Motorola Satellite Communications Inc., December 18, 1991 at 42-50; Reply Comments of Motorola, January 31, 1992 at 4-12; Consolidated Response of Motorola, March 27, 1992 at 21-23.

[11] Id.

it is using this pioneer's preference proceeding (among others) to try to get it.

That attempt should be rejected in this proceeding as well as in related ones,[12] particularly since there are requests for reconsideration of the pioneer's preference rules pending[13] and the lawfulness of those rules is not established.[14]

In light of these facts, LQSS urges the Commission not to proceed at this time with respect to the pioneer's preference requests relating to low-earth orbit satellite systems operating in the RDSS band. Action should be deferred until the Commission acts on the pioneer's preference reconsideration requests and completes the rulemaking with respect to the RDSS rules. At that time, the scope of the pioneer's preference would be clearer, and the likelihood of an award which would result in time consuming legal challenges might be reduced. In addition, the Commission would protect its processes by not acceding to Motorola's attempt to turn the pioneer's preference proceeding into a comparative hearing without rules or procedures. Accordingly, although LQSS responds to matters raised in the initial comments in this ET Docket No. 92-28, LQSS asks the Commission to hold the pioneer's preference proceeding in abeyance and to move forward expeditiously with a rulemaking addressing the RDSS rules.

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[12] See, Order Denying an Extension of Time for Comments and Replies in ET Docket No. 92-28, DA 92-326, March 27, 1992. In this Order, the Commission states that "the issues in the licensing and rulemaking proceedings to a significant degree are analogous to the issues raised by their associated pioneer's preference requests."

[13] Petition for Reconsideration of Loral Qualcomm Satellite Services in GEN Docket No. 90-217, April 6, 1992 and Petition for Further Reconsideration of TRW Inc., in GEN Docket No. 90-217, April 6, 1992.

[14] Id.

II. THE COMMISSION CANNOT LAWFULLY GRANT A PIONEER'S PREFERENCE TO MOTOROLA

A. The Comments Show that Grant of a Preference to Motorola Would Unlawfully Prejudice the Rights of the Other LEO MSS applicants by Denying Them Comparative Consideration.

All commenters except Motorola oppose grant of a "tentative" pioneer's preference to Motorola for its system proposal. The comments provide numerous grounds for not granting such a preference, but first and foremost is the fact that such a grant would be unlawful in the circumstances presented here. LQSS, TRW Inc., Constellation and Ellipsat are unanimous in their conclusion that the Commission may not grant a pioneer's preference in a proceeding where mutually exclusive applications were already on file prior to commencement of any pioneer's preference proceeding.[15] Such a grant would be inconsistent with the rights of the parties to a fair consideration of their proposals on the merits required by the Act and by Ashbacker.

The Commission, in its pioneer preference rules, attempted to characterize the award of a "tentative" preference as "threshold eligibility criteria" for the receipt of a license.[16] But as TRW Inc. states in its Opposition to grant of a pioneer's preference to Motorola, the criterion of "innovativeness would be elevated to a level of supreme importance"[17] and other aspects of the competing applications would not receive the comparative consideration required under Section 309 of the Act and Ashbacker. Moreover, selection of Motorola, given the nature of its proposed system, would prevent consideration on the merits of any other system. There is, therefore, no basis for arguing that U.S. v. Storer,

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[15] See, Opposition to Motorola's Request for Pioneer's Preference of LQSS at 7; Opposition of TRW at 6; Opposition of Constellation Communications at 10; and Opposition of Ellipsat at 7-8.

[16] Pioneers Preference Order, supra, at para 33.

[17] Opposition to Pioneer's Preference Request of Motorola Satellite Communications Inc. of TRW Inc., April 8, 1992, ET Docket No. 92-28, PP-29, PP-30, PP-31, PP-32, PP-33.

351 U.S. 192 (1956) applies here; the Commission is not establishing threshold criteria for comparative consideration, but would be selecting one applicant without any comparative consideration.[18]

B. Grant of a Pioneer's Preference to Motorola Would Prejudice Any Rulemaking Concerning the RDSS Bands

In addition to violating the rights of other applicants, grant of a "tentative" preference to Motorola would prejudice any rulemaking with respect to the RDSS bands. The Commission, despite its desire to reward innovation and expedite its decision-making processes, must proceed with reasoned decision-making when considering rule changes. The current policies in the RDSS bands provide for open entry,[19] and pro-competitive actions. If the Commission decides to change those rules, it "must supply a reasoned analysis indicating that prior policies and standards are being deliberately changed, not casually ignored."[20]

To award a pioneer's preference to Motorola would prejudice rulemaking at the notice stage without any such "reasoned analysis." Motorola's proposal is inconsistent with the Commission's open entry policy and does not comply with its rules requiring use of CDMA.

Motorola has proposed a "band segmentation" approach which would provide for

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[18] In the VITA decision, the Commission concluded that granting a preference would not foreclose other systems from being licensed. Tentative Decision, ET Docket No. 91-280, FCC 92-21, released Feb. 11, 1992 at 9. Indeed, the other systems agreed and supported grant of a pioneer's preference to VITA. Id. at 3.

[19] Licensing Provisions for the Radio Determination Satellite Service, Section 25.141, et. seq., 47 C.F.R. § 25.141, provides in pertinent part, that:

"Each radiodetermination satellite service licensee will be assigned the entire allocated frequency bands on a non-exclusive basis..."

[20] Greater Boston Television Corp. v. FCC, 444 F. 2d 841, 852 (D.C. Cir.), cert. denied, 403 U.S. 923 (1971).

operation of its system, and only its system, in the upper 10.5 MHz of the 1610-1626.5 MHz bands.[21] Motorola claims that this is not a monopolistic proposal because the remaining 6 MHz in the L-band and the 2483.5-2500 MHz band could be utilized by multiple systems.[22] Motorola ignores the myriad practical features associated with this approach, including the fact that the lower 6 MHz of the L-band must be shared with Radioastronomy and GLONASS, and the fact that the significant imbalance in uplink and downlink would have serious repercussions and preclude effective use of the remaining spectrum by any other system as well as the requirements of Section 25.141 of the Commission's Rules.

The Commission's rules for RDSS are premised on use of CDMA technology. Motorola's proposed system uses TDMA technology. Motorola concedes that the current rules mandate use of CDMA/spread spectrum.[23] These rules can not be changed or abrogated without a rulemaking or "reasoned analysis". Yet this is exactly what would occur, unlawfully, were a pioneer's preference awarded to Motorola's TDMA proposal.

Thus, Motorola's proposal is inconsistent with the Commission's rules, and the Commission's pro-competition and open entry policies. These rules and policies can not be abrogated by award of a pioneer's preference, as they would be by an award to Motorola.

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[21]Reply Comments of Motorola Satellite Communications, filed January 31, 1992 at 4-12 and Consolidated Response, March 27, 1992 at 23.

[22]Id.

[23]See Reply Comments of Motorola Satellite Communications Inc, January 31, 1992 at 5.

C. The Comments Are Unanimous and Motorola's Filings Confirm That Motorola Has Not Demonstrated that its Proposal Deserves a Preference.

The comments in this proceeding, including those of all the RDSS applicants except Motorola, as well as those of the American Mobile Satellite Corporation, Inc. (AMSC), agree that Motorola has not demonstrated that a grant of a preference for its proposal is consistent with either the purposes of the pioneer's preference or supported by innovation.

The purpose of the pioneer's preference is to reward innovative proposals that promise to "enable the sharing, co-use, of allocated spectrum," "yield efficiencies in spectrum use...or spectrum sharing, or which significantly reduce costs to the public." [24] As described at length in prior submissions,[25] Motorola's proposal (including its attempt to promote band splitting) blocks, rather than enables, "sharing" or "co-use" of "allocated spectrum", does not "yield efficiencies in spectrum use...or spectrum sharing", and increases rather than reduces costs to the public. And as Constellation states in its filings, grant of a pioneer's preference to Motorola would be inconsistent with "20 years of pro-competitive telecommunications policies." [26] AMSC further points out that the "bidirectional operation of Motorola's system is likely to reduce system capacity and exacerbate interference to other users of the RDSS bands, such as radioastronomy and global positioning systems such as GLONASS.[27] TRW notes correctly that Motorola's proposal "flouts rather than facilitates the objective of spectrum sharing."[28]

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[24] Pioneer's Preference Order footnote 5, supra, at paras. 37 and 48

[25] See LQSS filings cited in footnote. 9, supra.

[26] See Opposition of Constellation Communications Inc., footnote 15, supra, at 5.

[27] See Consolidated Opposition to Requests for Pioneer's Preference of AMSC Subsidiary Corp., April 8, 1992, Technical Statement at 4.

[28] TRW Opposition, at 10.

As for innovativeness, the commenting parties, including AMSC, provide ample evidence that various components claimed by Motorola to be "innovative" have in fact been employed in numerous satellite communications systems over the past years. For example, a detailed list of these prior systems, and the claimed Motorola "innovations," is provided in Ellipsat's comments. LQSS, as well as TRW Inc., Constellation, Ellipsat and AMSC, in April 8, 1992 filings, addressed the specific claims of technological "innovation" in Motorola's request for pioneer's preference request. As TRW states:

> Motorola seeks a preference for an amalgamation of advances pioneered by others, which has produced a grandiose scheme that is spectrally inefficient, monopolistic, and too expensive to provide reasonably priced service to the public. Because Motorola is not the "developer or proponent" of the innovations it claims, it is not entitled to a pioneer's preference. See, TRW April 8, 1992 Comments at 13.

The parties point out that low-earth orbit satellite technology was not developed or substantially contributed to by Motorola.[29] In addition, the parties describe the use of inter-satellite links by NASA in the Tracking Data and Relay Satellite System (TDRSS) and the Department of Defense's MILSTAR system. [30] The inter-satellite links proposed by Motorola are not for use in the RDSS bands, but rather in the Ka-band. Thus, such operation is not truly related to Motorola's use of the RDSS band, and can not support a preference for RDSS band usage. The proposed spot beam technology is also not new or novel, but has been or will be employed in numerous other satellite systems, including those of AMSC, INTELSAT, U.S. domestic satellites as well as in the systems proposed by LQSS, TRW, Constellation and Ellipsat.

Motorola's claim that bidirectional use of the spectrum is innovative and supports its pioneer's preference request is similarly incorrect. As LQSS pointed out in its Opposition, bidirectional use of spectrum has been used for a number of years in a variety

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[29] See, LQSS Opposition at 4, 5; TRW Opposition at 11-12; Constellation Opposition at 8; Ellipsat Opposition at 11; and AMSC Consolidated Opposition at 18.

[30] Id.

of telecommunications systems.[31] Moreover, in the case of a low-earth orbit system of the type Motorola proposes, Motorola has yet to demonstrate the workability of bidirectional operations.[32] In fact, AMSC, in its Technical Appendix, points out that the proposed bidirectional working of the Motorola system is likely to reduce the Iridium system capacity, "and will exacerbate the interference [the Motorola] system will cause to other users of the RDSS bands."[33] Ellipsat highlights the fact that Motorola's use of the 1613.8-1626.5 MHz band in the space-to-Earth direction is on a secondary basis, e.g., Motorola cannot cause harmful interference to nor seek protection from any other system.[34] Motorola has nowhere explained how its bidirectional operation can operate feasibly within this constraint in the use of the band as a downlink.

With regard to Motorola's claim that the on-board processing to be used in its system is sufficiently innovative to deserve a pioneer's preference, it is noteworthy that Motorola has had an opportunity to develop on-board satellite processing for the NASA Advanced Communications Satellite (ACTS), at the expense of the U.S. taxpayer. In addition to ACTS, on-board signal processing is used in INTELSAT satellites, in the Satellite Business Systems network, the French TELCOM I system and the MILSTAR system.[35]

Apart from Motorola's failure to demonstrate that its system is either innovative or that it is the innovator of the elements to be used in the proposed system, Motorola has failed to demonstrate that its system is financially feasible or that it can bring service to

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[31] See, LQSS Opposition at 5.

[32] See, TRW Opposition at 13, Ellipsat Opposition at 12, Constellation Opposition at 9, and AMSC Consolidated Opposition, Technical Appendix at 4.

[33] AMSC Consolidated Opposition, Technical Appendix at 4.

[34] Ellipsat Opposition, at 12.

[35] TRW Opposition, at 13.

the public at a reasonable cost.[36] Motorola's system is currently estimated to cost $3 billion. Even this price could be substantially understated, as the size of the satellites grows.[37] A substantial cost escalation in the price of the spacecraft would have an enormous impact on the system cost, and ultimately, the price of the service to users.

Motorola implicitly acknowledges the deficiency of its showing by its filing of a "Supplement to Request for Pioneer's Preference" on April 10, 1992, apparently in response to the Commission's public notice[38] soliciting additional pioneer preference requests with regard to the RDSS bands. LQSS addresses this April 10 filing in separate pleadings filed today. The separate LQSS filings ask the Commission to strike the Supplement and the attachments to it, and show that Motorola's request that the Commission maintain a part of that filing as confidential is improper and unlawful.

Motorola's supplemental additional filing -- of press clippings and material prepared as solicitations for media exposure and material for which confidential treatment is requested -- provides further illustration of why the Commission should defer action in this docket. The clippings and press solicitations submitted as support for a preference trivialize the Commission's processes and, if permitted, would reduce the determination of "innovativeness" to a battle of public relations departments. Innovativeness does not, however, rest on press clippings but on achievement, an area, as discussed above, in which Motorola's performance is not demonstrated. In addition, filing of additional information

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[36] The technical feasibility of Iridium also remains uncertain. Motorola claims repeatedly, to be conducting tests or experiments. No results or data in this regard are provided in its comments, nor is any other demonstration of feasibility or viability.

[37] See, "Iridium Weight Grows," Space News, April 20-26, 1992, which states that, "the increase in spacecraft weight to about 1,370 pounds could have a profound impact on the eventual price tag of the multi-billion-dollar effort to provide worldwide mobile telephone service." The article states that this estimate is almost 500 pounds larger than original estimates.

[38] See, "Deadline to File Pioneer's Preference Requests Low-Earth Orbit Satellites above 1 GHz" (ET Docket No. 92-28), Mimeo No. 391465, March 11, 1992.

pursuant to a request for confidential treatment demonstrates that LQSS' concern that Motorola is attempting to conduct a "comparative hearing without rules" is well founded. Granting this request for confidentiality would enable Motorola to rely on material not reviewed by, nor commented on, nor evaluated by, competing applicants, to garner a "dispositive" preference. This too is inconsistent with Ashbacker and with elemental notions of fair administrative procedure. This type of activity not only subverts the pioneer's preference proceeding, but also is unlawful under Section 309 of the Act, 47 U.S.C. § 309, and Ashbacker.

D. A Nationwide Preference for Motorola is Neither Warranted Nor in the Public Interest.

The Commission has indicated that it would award a nationwide preference only in rare instances,[39] and that it will not "award a pioneer's preference that would bestow a nationwide monopoly."[40] LQSS, in its petition for reconsideration of the pioneer preference rules, asked the Commission to clarify the criteria which would apply to such an award and its relationship to Ashbacker rights.[41] In addition, all the RDSS applicants in this proceeding other than Motorola, argue that such a preference is not warranted and would serve to assist Motorola to secure the monopoly it seeks, not only for service in the United States, but worldwide. [42]

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[39] See, Pioneer's Preference Rulemaking, at para. 19.

[40] VITA Tentative Decision In the Matter of a Request for Pioneer's Preference to Allocate Spectrum for Fixed and Mobile Satellite Service for Low-Earth Orbit Satellite, ET Docket No. 91-280, RM-7334 (PP-1), RM 7399 (PP-2) and RM-7612 (PP-3), released Feb. 11, 1992, at 6. See Also VITA Tentative Decision at 6, para 13; See Also Pioneer's Preference Order, 6 FCC Rcd at 3490 para 19 "... we do not intend to award a pioneer a nationwide monopoly on a service and exclude others from providing that service." Reconsideration Order, slip op. at 3 para 4.

[41] LQSS Petition for Reconsideration, filed April 6, 1992.

[42] LQSS Opposition at 7; TRW Opposition at 6; Constellation Opposition at 3; Ellipsat Opposition at 5 and 6.

As the parties state in their filings, Motorola's proposed bi-directional operation and use of TDMA would essentially preclude coordination of systems in the relevant bands.[43] Grant of a preference to Motorola would totally contradict the Commission's goals of encouraging new technologies and services by effectively bestowing a nationwide, and a global monopoly on Motorola.[44] A grant of Motorola's request for pioneer's preference would likely shape the RDSS rulemaking proceeding to provide for use of the 1616-1626.5 MHz on a bidirectional basis, using TDMA, as Motorola has proposed. As Motorola has already stated, such use of this band by its system would preclude the operation of any other system in these frequencies.

The remainder of the 1610-1626.5 MHz band and the 2483.5-2500 MHz band could be utilized by other LEO MSS systems, according to Motorola. However, the 1610-1616 MHz band would have to be shared with radio astronomy operations and with the Russian global positioning system, GLONASS. While CDMA systems, such as LQSS, have stated their belief that such coordination could be achieved, six MHz would be an inadequate amount of spectrum in which to provide the uplink for the LEO MSS systems, as well as to achieve such coordination.[45] In addition, the mismatch in amount of spectrum between the uplink and downlink would create serious, if not insurmountable, system design problems.

The Commission's pioneer preference order stated that it contemplated the licensing of other systems.[46] Unfortunately, the Commission, in developing the pioneer's preference rules, may not have foreseen the strategy of an applicant such as Motorola, which is

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[43] Ellipsat Comments at 5.

[44] Id.

[45] See, Filings of LQSS and TRW Inc. cited in footnote. 9 infra.

[46] Pioneer Preference Order, at para.19.

attempting to create a monopoly franchise through its proposal for use of spectrum, and its related preference strategy.

Motorola argues that its system design and ability to provide universal service justify a nationwide preference. [47] Motorola states that none of the other RDSS applicants can provide service to handheld units throughout the United States.[48] This statement has been refuted in numerous pleadings with regard to the applications for RDSS service.[49]

In this pioneer preference proceeding, the Commission is faced with a monopoly proposal from one entity -- Motorola -- and proposals which will accommodate spectrum sharing and multiple entry from four others. The burden of justifying a choice of Motorola for pioneer's preference is all but insurmountable in this case, and moreover would violate the rights of the other RDSS applicants, as well as do a disservice to the public interest. For these reasons it is abundantly clear that Motorola cannot be granted a nationwide preference, or any other type of pioneer preference.

III. IF A PIONEER'S PREFERENCE IS GRANTED, LQSS SHOULD RECEIVE IT FOR ITS INNOVATIONS

As stated in LQSS' initial comments, if a preference is granted in this proceeding, LQSS merits such a grant. The LQSS system utilizes pioneering CDMA and other technology to fulfill the Commission's goals for the pioneer's preference, including establishing a new communications service, utilizing innovative technology, and promoting efficient use of spectrum, multiple entry, competition and low-cost service to the public.

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[47] See Motorola Comments filed on April 8, 1992, at 4.

[48] Id.

[49] See, Filings of LQSS cited in Footnote.9 infra.

One of the two LQSS shareholders, Qualcomm, Inc. has been a leader in developing proprietary CDMA technology, and as discussed in the LQSS comments, has demonstrated this technology for use in cellular systems, geostationary satellites, has and is conducting experiments in PCS, and will conduct appropriate further experiments to demonstrate this technology in the provision of voice, data and radiodetermination service from low-earth orbit satellites.

In its comments, Motorola criticized various elements of the LQSS system and innovations and request for pioneer's preference, claiming that LQSS' use of CDMA is not a technological innovation beyond existing communications technology. Motorola's criticisms are wrong and baseless.[50] Motorola claims that the LQSS antenna design will not improve the near-far problem and that the technical feasibility of the LQSS system design must be questioned because of "adverse effects of intersatellite interference and its keep alive functions."[51]

In particular, Motorola claims that the Globalstar antenna design aggravates, rather than improves the near-far problem.[52] While Motorola may be correct in its description of the LQSS spacecraft antenna, it is wrong as to its conclusions of the impact of the Globalstar antenna when it is in a direction perpendicular to the major axis of the ellipse. Despite Motorola's assertions, this position does not aggravate the near-far problem. No appreciable impact on the channel power control is experienced because, at the beam useful area crossover, a 1 db variation in antenna gain is within the system threshold operation margin.

Motorola's questioning of the LQSS system design's ability to take account of

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[50] Motorola Comments at 21-23.

[51] Id.

[52] Id.

intersatellite interference and its "keep alive" functions have been fully addressed and refuted by LQSS in the LQSS filings of January 31 and March 27. In sum, contrary to Motorola's excessively complex system design, the LQSS design was developed to maximize cost-effectiveness and spectral efficiency. Due to the innovative CDMA techniques developed by Qualcomm, Inc., and to be utilized in Globalstar, communication links can be maintained at very low carrier-to-interference (C/I) levels. Motorola's criticism of the LQSS antenna system and intrasystem interference [53] is incorrect. Intra/interbeam interference has been taken into consideration in the LQSS link budgets of the June 3, 1991 application. In fact, LQSS was overly conservative when it used a 75 percent figure in its interbeam interference calculations.[54]

The high spectral efficiency and system capacity of mobile CDMA systems was recently verified by the field trials conducted by Qualcomm in December, 1991.[55] These field trials demonstrate that CDMA technology can achieve 10 to 20 times the capacity of analog FDMA. By contrast, a TDMA system, such as that to be utilized in the Motorola system, may be able to achieve only 3.5 times the capacity of analog FDMA systems.

AMSC argues that no LEO MSS applicant should receive a pioneer's preference.[56] With respect to LQSS, AMSC states that the LQSS design elements are "routine" and do not involve innovation. In particular, AMSC argues that the LQSS spot beam alignment, call handoff protocols, use of pilot signal for synchronization of receivers, shaping of antenna

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[53] Motorola Comments at 22.

[54] LQSS Application, June 3, 1991 at 181-183. The equivalent number of interferors is 75 percent of the number of users in a particular beam.

[55] LQSS provided information on the results of these trials in its January 31, 1992 filing.

[56] AMSC also notes that "With the exception of Loral, all of the proponents submit only the most general of claims regarding the innovations they consider worthy of a preference." AMSC Consolidated Opposition at 5.

gain and use of CDMA techniques have been used in other systems and do not merit a pioneer's preference.

AMSC states that CDMA is a technology that has existed since the 1940s. LQSS provided this information itself in its initial Comments in this proceeding. However, AMSC's argument that LQSS' use of CDMA is "routine" and does not involve innovation reveals AMSC's ignorance about the innovative commercial applications and evolutions of CDMA technology.

CDMA has been, and still is, used extensively in military communications systems, both to permit communications which are not detectable by enemy systems and which resist jamming by an enemy desiring to disrupt communications. The achievement of these objectives, rather than improving spectrum efficiency and system capacity are important in military systems. By contrast, Qualcomm and LQSS have developed innovative CDMA technologies which can be implemented in high-capacity commercial systems which will achieve high spectral efficiency and system capacity. Some of the innovations that have been developed include dynamic, link-by-link power control, soft handoff and rapid synchronization via a pilot signal. These techniques cannot be considered "routine" for any mobile satellite, or even terrestrial cellular system. Just one example is handoffs. In TDMA and FDMA system, only hard handoffs can be used, and these are noticeable by the mobile users. Substantial improvement in quality can be achieved by the introduction of the technology which enables this change in system operation.

Thus, the Commission should dismiss the Motorola and AMSC unsupported and erroneous assertions that LQSS' developments of and use of CDMA and other technology in the Globalstar system are not deserving of a pioneer's preference. As provided in LQSS' filing in support of its request for pioneer's preference, the CDMA used in Globalstar has received patents, was developed by one of the Globalstar owners and has been demonstrated to be viable and feasible in terrestrial systems as well as geostationary satellite systems.

A grant of a pioneer's preference to LQSS would recognize these important innovations, permit efficient use of spectrum and open entry, supporting the underlying public interest basis for the pioneer's preference.

IV. ELLIPSAT'S SYSTEM DOES NOT MERIT A PIONEER'S PREFERENCE.

Ellipsat, Inc., argues that it merits a pioneer's preference primarily because it filed the first application for a LEO system using the RDSS bands. Although Ellipsat filed in November, 1990, that application was so deficient that Ellipsat can not claim that it is first in time. Were such a claim accepted, applicants would be encouraged to file skeleton applications merely to garner a pioneer's preference, only to later amend or supplement them as Ellipsat did on June 3, 1992. Even as supplemented, there is no basis to award a preference to Ellipsat.

Ellipsat concedes that its system design "uses existing state-of-the-art technology."[57] In addition, Ellipsat provides no support for its claim that it was the first to recognize that low-earth orbit satellite systems could be used to provide mobile voice and position location services. The Commission has already indicated that it seeks to reward the true developer of an innovation, and not the applicant that might be first with a request.[58] In the "little LEO" proceeding, the Commission awarded a "tentative preference" to Volunteers in Technical Assistance, which was not the first to file an application. Ellipsat's argument that it should be recognized for its proposed use of an elliptical orbit must similarly be discarded as such orbits have been utilized in a number of systems, including the Soviet Molniya system which has operated for years.

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[57] See Request for Pioneer's Preference of Ellipsat, File No. PP-30, at 2 (July 29, 1991).

[58] See, Pioneer's Preference, at 3500, n. 10. See footnote 5, supra.

The Commission, therefore, can not grant Ellipsat's request for a pioneer's preference.

V. CONCLUSION

The Commission should defer action in this proceeding, pending the action on the pending petitions for reconsideration of its pioneer preference rules, and instead promptly initiate a rulemaking with respect to the RDSS bands, addressing the issues raised in the rulemaking petitions, as well as incorporating the outcome of WARC-92. If the Commission goes forward with this pioneer preference docket, it should not award a preference to Motorola because such an award is not warranted, would violate the rights of the LEO MSS applicants to comparative consideration, result in legal challenge, and delay the implementation of new and innovative telecommunications services, to the detriment of the public interest. A preference can and should be awarded to LQSS.

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CERTIFICATE OF SERVICE

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